Installation Guide

SW-110
DOS
SCSI SOFTWARE MANAGER

SCSI Software Interface
Layer with Disk Driver

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SW-110

DOS

SCSI SOFTWARE MANAGER

SCSI Software Interface
Layer with Disk Driver

Revision History

Revision	Change Activity	Date
A	Release	04/15/92
B	Release	07/13/92

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF FIGURES

SECTION 1 — INTRODUCTION

BusLogic offers a wide range of high-performance host adapters that provide the interconnection between the host's system bus and Small Computer System Interface (SCSI) peripheral devices. The BusLogic SW-110 DOS SCSI Software Manager allows applications to communicate with the SCSI host adapter and to access additional SCSI devices connected to the host adapter. BusLogic's complete family of Industry Standard Architecture (ISA), Extended Industry Standard Architecture (EISA), and Micro Channel™ SCSI host adapters are supported in this environment.

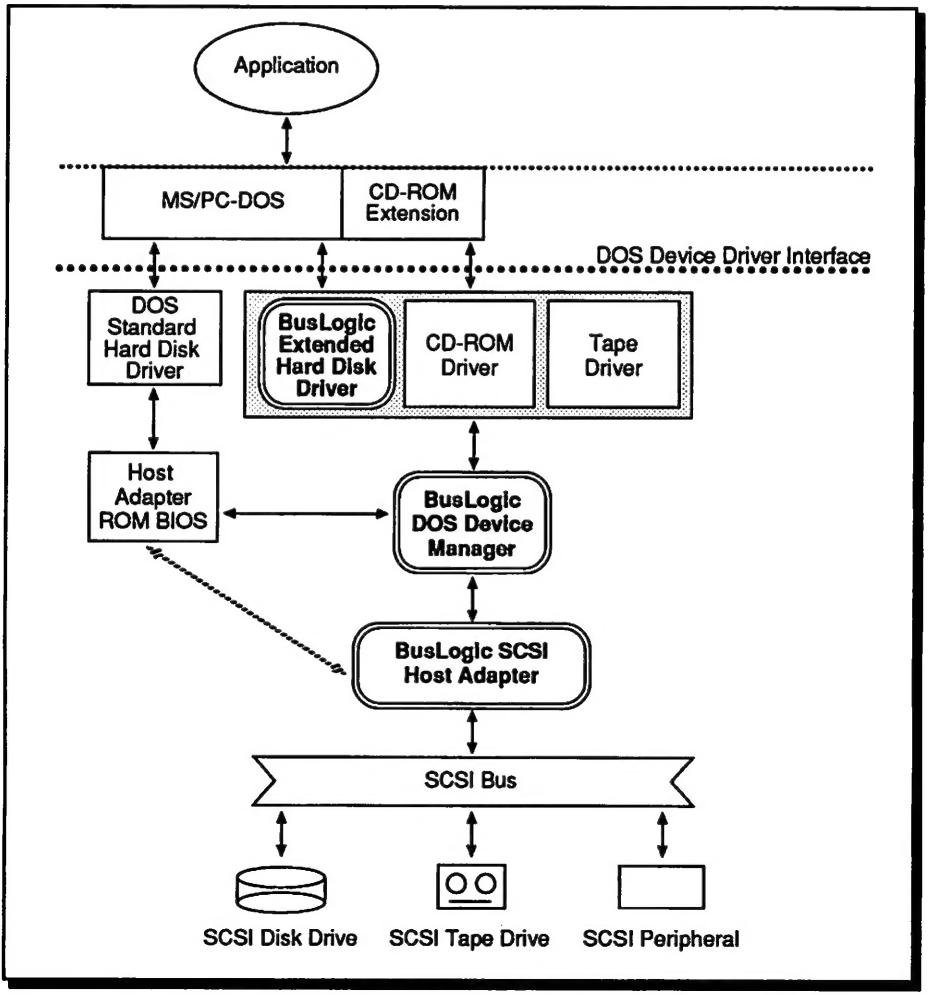


Figure 1-1. Role of the BusLogic DOS SCSI Software Manager

COMPONENTS OF THE BUSLOGIC DOS SCSI SOFTWARE MANAGER

The BusLogic DOS SCSI Software Manager consists of the following three components:

- The BusLogic DOS Device Manager
- The BusLogic Extended Hard Disk Driver and
- The BusLogic Extended Hard Disk utility.

The BusLogic DOS SCSI Software Manager is functionally equivalent to the Advanced SCSI Programming Interface (ASPI). The BusLogic DOS SCSI Software Manager is compatible with Microsoft's Windows™ (Version 3.0 or later), and has been tested with a wide selection of third-party software including the following:

- Sytron SYSTOS™
- Quarterdeck QEMM 386™and
- Cheyenne ARCserve/Solo™

BusLogic DOS Device Manager

BTDOSM (filename BTDOSM.SYS) is BusLogic's DOS Device Manager. As Figure 1-1 indicates, BTDOSM provides a common interface between DOS and DOS applications and the SCSI host adapter. Once BTDOSM is loaded, the DOS applications (e.g., a tape access program) can share the SCSI host adapter.

Note that if more than one BusLogic host adapter board is installed in a system, you must install a BusLogic DOS Device Manager for each board. For more information on BusLogic's DOS Device Manager, refer to Section 2 in this manual.

BusLogic Extended Hard Disk Driver

BTMDISK (filename BTMDISK.SYS) is the BusLogic extended hard disk driver. With BTMDISK you can support more than two hard disk drives on a system.

As Figure 1-1 indicates, BTMDISK will co-exist with the standard DOS hard disk driver. A system's first two hard disk drives (e.g., drives C: and D:) will

use the standard DOS hard disk driver while additional hard disk drives will use the BusLogic Extended Hard Disk Driver.

Note that BTMDISK can support multiple BusLogic SCSI host adapter boards within a single system. If you plan to use more than two hard disk drives on a system, you must install both BTDOSM and BTMDISK. For information on how to install BTMDISK, refer to Section 3 in this manual.

BusLogic Extended Hard Disk Utility

The **BTFDISK** utility (filename BTFDISK.EXE) is the BusLogic extended hard disk partitioning program. When used with the BusLogic Extended Hard Disk Driver, you can support a system that has more than two hard disk drives.

Because the standard DOS **FDISK** utility only allows you to partition hard drives that have a SCSI ID of 0 or 1, you are unable to partition more than two hard disk drives per system. BusLogic's **BTFDISK** utility allows you to partition SCSI disk drives that have a SCSI ID 0 through 7. After the disk drive has been partitioned with **BTFDISK** and formatted, DOS will be able to recognize it.

As well as partitioning disk drives, **BTFDISK** can also be used to delete DOS and non-DOS partitions (e.g., a UNIX partition), to set the active partition, and to display partition information. For additional information on this utility, refer to Section 4 in this manual.

TYPICAL USES

Typically, the BusLogic DOS SCSI Software Manager is used:

- When the system has more than one SCSI host adapter
- When a system has more than two hard disk drives already configured
- When you want to install a SCSI hard disk that has a SCSI ID other than 0 or 1
- When you want to configure with such SCSI peripherals as SCSI tape drives or magnetic optical (MO) disk drives, or
- When you want to support programs, such as Microsoft Windows 3.0 and above, that use virtual memory.

BusLogic Supported SCSI Host Adapters

The BusLogic DOS SCSI Software Manager is designed to provide full support of BusLogic's complete family of Industry Standard Architecture (ISA), Extended Industry Standard Architecture (EISA), and Micro Channel SCSI host adapters. For more details on any of these BusLogic host adapters, refer to the host adapter's installation guide and reference manual.

REFERENCE DOCUMENTS

To install the BusLogic DOS SCSI Software Manager on your computer, you should have the following documentation:

- ❑ BusLogic documentation for the SCSI host adapter board
- ❑ The DOS installation and user's guide
- ❑ Microsoft Windows User's Guide (if applicable)
- ❑ The system's installation and set-up guide
- ❑ The system's computer technical reference manual (optional)
- ❑ The installation guide for third-party device drivers (optional)

HARDWARE AND SOFTWARE REQUIREMENTS

The BusLogic DOS SCSI Software Manager can be installed on any computer that has one or more ISA, EISA, or Micro Channel BusLogic host adapter boards.

To install the BusLogic DOS SCSI Software Manager successfully, you should have the following software.

- ❑ BusLogic's DOS SCSI Software Manager installation diskette
- ❑ MS-DOS Version 3.3 or later
- ❑ Microsoft Windows 3.0 or later (if applicable) and
- ❑ Third-party software (e.g., tape back-up program) (if required)

SECTION 2—INSTALLING THE BUSLOGIC DOS DEVICE MANAGER

This section describes how to install the BusLogic DOS Device Manager (filename BTDOSM.SYS) from the DOS prompt. If you are running Windows, you may also install the device driver by using the equivalent Windows commands.

The BusLogic DOS SCSI Software Manager (filenames BTDOSM.SYS, BTMDISK.SYS, and BTFDISK.EXE) is in the DOS directory on the BusLogic installation diskette. For the latest product information, BusLogic recommends that you check for a README.TXT file in the root directory of the BusLogic installation diskette.

INSTALLATION INSTRUCTIONS

To install the BusLogic DOS Device Manager (BTDOSM), you must:

- ❑ Make backups of the BusLogic DOS SCSI Software Manager installation diskette.
- ❑ Copy the contents of this BusLogic installation diskette onto the system's hard drive.
- ❑ Use an ASCII file editor to make the necessary changes to the system's CONFIG.SYS file.
- ❑ Reboot the system to load the BusLogic DOS Device Manager.

Phase 1 — Preparing for the Installation

To prepare for the installation, it is recommended that you make a back-up copy of the BusLogic installation diskette. Use the DOS DISKCOPY command to make the back-up diskette.

Insert the 5 1/4" BusLogic installation diskette into your system's 5 1/4" drive and then proceed to use the DISKCOPY command. For example, if your 5 1/4" drive is Drive A insert the BusLogic diskette into Drive A and then type:

DISKCOPY A: A: <RETURN>

Phase 2 — Copying the BusLogic DOS SCSI Software Manager Files

You must copy the BusLogic DOS SCSI Software Manager files onto the system's hard drive. To complete this task, you must:

1. Use the DOS MD command to create a DOS directory for the BusLogic DOS SCSI Software Manager files on the system's hard disk. This directory can be called BTDOSMGR or any name that you wish.

   At the DOS prompt (A:\>) type:

   MD C:\BTDOSMGR <RETURN>

   The directory BTDOSMGR will be created.

2. Insert the BusLogic DOS SCSI Software Manager installation diskette into the system's floppy drive.

3. Use the DOS COPY command to copy the contents of this BusLogic installation diskette over to the directory that you have just created on the system's hard disk.

   At the DOS prompt type:

   COPY A:\DOS*.* C:\BTDOSMGR <RETURN>

Phase 3 — Modifying the System's CONFIG.SYS File

In order for these BusLogic DOS SCSI Software Manager files to be loaded whenever the system is booted you *must* modify the CONFIG.SYS file. The CONFIG.SYS file must contain a specific DEVICE=command in order for the BusLogic DOS Device Manager to be loaded whenever the system is booted.

1. Use an ASCII file editor to insert the necessary DEVICE=command into the system's CONFIG.SYS file.

2. When inserting or editing the DEVICE=command for a BusLogic DOS Device Manager, you must use the following convention.

   Syntax **DEVICE =** [*path*] **BTDOSM.SYS** [**/p***port address*] [**/d**] [**/I**] [**/x***speed*] [**/n***bus on time*] [**/f***bus off time*] [**/I**]

   where BTDOSM.SYS is the BusLogic DOS Device Manager filename.

   Parameter [*path*]

   Specifies the pathname where the BusLogic DOS Device Manager resides (e.g., C:\BTDOSMGR).

   Switches [**/p***port address*]

   Specifies the I/O port address that the BusLogic DOS Device Manager is to use to communicate with the host adapter. The possible options are 330, 334, 230, 234, 130, and 134. Note that this value is in HEX. *The default is 330H.*

   [**/d**] Determines if the configuration information about the attached target device is to be displayed. If this switch is turned on, the configuration information will be displayed when the system is booted. *By default this switch is not specified (turned off) and the configuration information will not be displayed.*

[/l] Provides support for SCSI logical units (LUNs) that have SCSI IDs other than zero. If this SCSI Logical Units switch is specified (turned on), the BusLogic DOS Device Manager can recognize all eight possible SCSI LUNs on each target device. *By default this switch is turned off.*

[/x*speed*]

Specifies the AT bus master transfer rate. It allows you to override the AT bus master transfer rate set by the PC/AT host adapter board's switch setting. *By default, the AT bus master transfer speed is set to 04-5.7 MBytes/sec.*

The possible options are:
00-5.0 MBytes/sec
01-6.7 MBytes/sec
02-8.0 MBytes/sec
03-10.0 MBytes/sec
04-5.7 MBytes/sec

For example, an AT bus master transfer rate of 00-5.0 MBytes/sec has been set up in the following CONFIG.SYS's DEVICE=command:

```
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p330 /d /x00
```

[/n*bus on time*]

Specifies the maximum amount of time that the BusLogic host adapter board can stay on the system bus. The value is in decimal. The possible options are between 02 through 15 microseconds. *The default is 11 microseconds.*

[/*tbus off time*]

Specifies the minimum amount of time that the BusLogic host adapter board must stay off the system bus. The value is in decimal. The possible options are between 01 through 64 microseconds. *The default is 4 microseconds.*

/I] Specifies if the embedded INT 13 module is to be loaded. By default, the system will load the INT 13 module. If this switch is specified (turned on), the INT 13 module will not be loaded.

If the INT 13 module is not loaded, INT 13 calls will be routed through the host adapter's ROM BIOS rather than through the BTDOSM's INT 13 code. Note that this will only affect the SCSI disk drives that are installed with the host adapter ROM BIOS.

When you install the BusLogic DOS Device Manager for the system's second board, you must specify this option. A conflict can occur, otherwise, when the system's BusLogic DOS Device Managers are handling INT 13 calls. *By default this switch is turned off and the INT 13 module will be loaded.*

Guidelines for Modifying the CONFIG.SYS File. When modifying the CONFIG.SYS file, use the following guidelines.

1. The BusLogic DOS Device Manager must be loaded prior to any extended memory managers. Consequently, you must insert the DEVICE=command for each BusLogic DOS Device Manager at the beginning of your CONFIG.SYS file before any extended memory managers.

2. If you have more than one SCSI host adapter board installed within a system, you must install a BusLogic DOS Device Manager for each additional board. Consequently, if you have two BusLogic host adapter

boards within a system, the system's CONFIG.SYS file must contain a DEVICE=command for each BusLogic DOS Device Manager. Refer to the preceding sample CONFIG.SYS file for an example of such a file.

3. When specifying the I/O port address within the DEVICE=command line, the I/O port setting of the corresponding host adapter board must be used. For example, if the BT-542 board's I/O switch setting is 330, then its BusLogic DOS Device Manager's I/O port address must also be set to 330.

```
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p330 /d /l
```

For more information on setting a BusLogic host adapter board's I/O port address, refer to the board's installation guide.

4. If you have more than one BusLogic host adapter board installed in the system, you must add the **INT 13 Module (/l)** option to the second board's BusLogic DOS Device Manager. For example,

```
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p334 /d /l
```

A Sample CONFIG.SYS File. The following is an example of a sample CONFIG.SYS file.

```
buffers=20
files=20
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p330 /d    rem : first card
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p334 /d /l rem : second card
DEVICE=C:\BTDOSMGR\BTMDISK.SYS
```

In this example, the system has two BusLogic SCSI host adapter boards already installed (first card and second card). The DEVICE=command for each of these boards is highlighted in the preceding illustration. Note that two BusLogic DOS Device Managers (BTDOSM) have been installed; one for each BusLogic host adapter board.

Because the first BusLogic host adapter board has an I/O port of 330H its BusLogic DOS Device Manager has been configured with a port address of 330H.

```
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p330 /d
```

The second board has an I/O port of 334H. As the following DEVICE=command indicates, the second board's BusLogic DOS Device Manager has been configured with a port address of 334H.

```
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p334 /d /i
```

Both BusLogic DOS Device Managers have been installed with the **Display Configuration Information (/d)** option turned on. When this option is specified, the system will display the requested configuration information about the target device that is attached to each host adapter board. It is displayed when the system is booted. For an example of this information, refer to the sample sign-on screen at the end of this section.

The BusLogic DOS Device Manager for the second BusLogic host adapter board has been installed with the **INT 13 Module (/i)** option also turned on.

```
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p334 /d /i
```

When this option is specified, the INT 13 calls will be routed through the host adapter's ROM BIOS rather than through the INT 13 code of the BusLogic DOS Device Manager. You *must* add this parameter to the second board's BusLogic DOS Device Manager to avoid conflicts when INT 13 calls are being handled.

Note that the last line of the CONFIG.SYS file indicates that the BusLogic Extended Hard Disk Driver (BTMDISK) has also been installed. This indicates that the system has more than two hard disk drives installed.

```
DEVICE=C:\BTDOSMGR\BTMDISK.SYS
```

If you are planning to install more than two hard disk drives on the system, then you must now proceed to install the BusLogic Extended Hard Disk Driver. Go to Step 1 within Section 3, "Installation of the BusLogic Extended Hard Disk Driver". Note that you should *not* reboot your system at this point.

If you are not planning to install more than two hard disk drives on the system, then you do not need to install the BusLogic Extended Hard Disk Driver. Consequently, you are ready to load the BusLogic DOS Device Manager by rebooting the system. For information on this topic, refer to the next heading, "Phase 4 — Loading the BusLogic DOS Device Manager".

Phase 4 — Loading the BusLogic DOS Device Manager

If you want to install more than two hard disk drives on the system, then you *must* install the BusLogic Extended Hard Disk Driver (BTMDISK). For information on installing BTMDISK, refer to Section 3.

If you are not installing BTMDISK:

1. Reboot the system to load the BusLogic DOS Device Manager.

2. Note that the BusLogic DOS Device Manager is automatically loaded when you reboot the system. After the system is booted, a sign-on message will appear reporting that the BusLogic DOS Device Manager has been loaded. If the BusLogic DOS Device Manager has been installed with the **Display Configuration Information** option specified, configuration information about the attached target device(s) will also be displayed.

   Refer to the following for a sample sign-on screen.

```
BusLogic DOS SCSI Software Manager Vx.y (C) CopyRight 1992 BusLogic
Corp.

SCSI ID 0 - LUN 0:    QUANTUM LP105S 9101094053.1  03/14/913109
SCSI ID 1 - LUN 0:    QUANTUM LP105S 9101094053.1  03/14/916110

I/O Port Address:     330
Interrupt Level:      11
DMA Channel:          5
Host Adapter SCSI ID: 7

INT 13H active for Drive C:
INT 13H has been redirected
```

In this example, the system has one SCSI host adapter board and two SCSI disk drives (SCSI ID 0 and SCDI ID 1) installed. The BusLogic Extended Hard Disk Driver has not been installed on this system because it only has two SCSI disk drivers that can be supported by the DOS standard hard disk driver.

The BusLogic DOS Device Manager was installed with the **Display Configuration (/d)** option turned on. Consequently, the sign-on screen displays the configuration information about the attached target devices (SCSI ID 0 and SCSI ID 1).

For Drive C: (SCSI ID 0) the system will route INT13 calls through the BusLogic DOS Device Manager's INT 13 code. For the second drive (SCSI ID 1), INT 13 calls will be routed through the host adapter's ROM BIOS.

This concludes the installation of the BusLogic DOS Device Manager.

SECTION 3—INSTALLING THE BUSLOGIC EXTENDED HARD DISK DRIVER

This section describes how to install the BusLogic Extended Hard Disk Driver (filename BTMDISK.SYS). BTMDISK must be installed if you want to support more than two disk drives on a system. BTMDISK must be used in conjunction with BusLogic's Extended Hard Disk utility (**BTFDISK**) to provide this support.

After installing BTMDISK, you must run the **BTFDISK** utility to partition the additional disk drives. After the disk drive(s) has been partitioned with **BTFDISK**, it must be formatted with the DOS FORMAT command. After this disk preparation process has been completed, DOS will be able to recognize the disk drive(s).

INSTALLATION INSTRUCTIONS

To install the BusLogic Extended Hard Disk Driver, you must have already installed the BusLogic DOS Device Manager (BTDOSM). For information on installing BTDOSM, refer to Section 2 earlier in this manual.

It is assumed that you have already copied the contents of the BusLogic DOS SCSI Software Manager installation diskette over to the system's hard drive as part of the BTDOSM installation.

To install the BusLogic Extended Hard Disk Driver (BTMDISK), you must:

- ❑ Use an ASCII file editor to make the necessary changes to the system's CONFIG.SYS file.

- ❑ Reboot the system to load BTMDISK and to run the **BTFDISK** utility. **BTFDISK** can be used to partition the system's SCSI disk drives that have SCSI IDs other than 0 or 1.

Phase 1 — Modifying the System's CONFIG.SYS File

The CONFIG.SYS file must contain a specific DEVICE=command in order for the BusLogic Extended Hard Disk Driver to be loaded whenever the system is booted.

1. Use an ASCII file editor to insert the necessary DEVICE=command into the system's CONFIG.SYS file.

2. When inserting or editing the DEVICE=command for the BusLogic Extended Hard Disk Driver, you must use the following convention.

   Syntax **DEVICE = [*path*] BTMDISK.SYS [/R# *of reserved DOS drives*]**

   where BTMDISK.SYS is the BusLogic Extended Hard Disk Driver filename.

   Parameter [*path*]

   Specifies the pathname where the BusLogic Extended Hard Disk Driver resides (e.g., C:\BTDOSMGR).

   Switch [/R# *of reserved DOS drives*]
   Determines the number of DOS drives that will be reserved for the removable media. If the hard disk is the nonremovable type, this switch will be ignored. The possible values are 1 to 24. *The default is 1 reserved DOS drive per removable hard disk.*

3. Refer to the following illustration for an example of a sample CONFIG.SYS file.

```
buffers=20
files=20
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p330 /d    rem : first card
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p334 /d /i rem : second card
DEVICE=C:\BTDOSMGR\BTMDISK.SYS
```

In this example, the system has two BusLogic SCSI host adapter boards already installed (first card and second card). Note that the last line of the CONFIG.SYS file indicates that the BusLogic Extended Hard Disk Driver (BTMDISK) has also been installed. This indicates that the system has more than two hard disk drives installed.

Guidelines for Modifying the CONFIG.SYS File. When modifying the CONFIG.SYS file, use the following guidelines.

1. The BusLogic Extended Hard Disk Driver (BTMDISK) must be loaded *after* the BusLogic DOS Device Manager(s) (BTDOSM). As the following example illustrates, you must insert the BTMDISK's DEVICE=command after the BTDOSM's DEVICE=command line(s).

```
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p330 /d      rem : first card
DEVICE=C:\BTDOSMGR\BTDOSM.SYS /p334 /d /i   rem : second card
DEVICE=C:\BTDOSMGR\BTMDISK.SYS
```

   As the preceding example indicates, BusLogic recommends that you place the DEVICE=command for the BusLogic Extended Hard Disk Driver (BTMDISK) immediately after the last BusLogic DOS Device Manager's DEVICE=command line.

2. If you have more than one SCSI host adapter board installed within a system, you only have to install one BusLogic Extended Hard Disk Driver (BTMDISK). Consequently, regardless of the system's configuration the CONFIG.SYS file should always contain only one BTMDISK DEVICE=command line.

After modifying the CONFIG.SYS file, you must reboot the system to load the BusLogic Extended Hard Disk Driver. Proceed to Step 1 under the next heading, "Phase 2 — Loading the BusLogic Extended Hard Disk Driver".

Phase 2 — Loading the BusLogic Extended Hard Disk Driver

Before rebooting the system to load the BusLogic Extended Hard Disk Driver, check: (1) that you have modified the system's CONFIG.SYS file to include the DEVICE=command line for the BusLogic DOS Device Manager, and (2) that you have modified the CONFIG.SYS file to include the DEVICE=command line for the BusLogic Extended Hard Disk Driver.

1. Reboot the system to load the BusLogic Extended Hard Disk Driver.

2. Note that the BusLogic DOS Device Manager and the BusLogic Extended Hard Disk Driver are automatically loaded when you reboot the system. After the system is booted, a sign-on message will appear. Refer to the following for an example of this sign-on screen.

```
DOS Manager Vx.y (C) CopyRight 1992 BusLogic Corp.

SCSI ID 0 - LUN 0:     QUANTUM LP105S 9101094053.1  03/14/913109
SCSI ID 1 - LUN 0:     QUANTUM LP105S 9101094053.1  03/14/916110

I/O Port Address:      330
Interrupt Level:       11
DMA Channel:           5
Host Adapter SCSI ID:  7

INT 13H active for Drive C:
INT 13H has been redirected

DOS Manager Vx.y (C) CopyRight 1992 BusLogic Corp.

SCSI ID 0 - LUN 0:     QUANTUM LP105S 9101094053.1  03/14/913109
SCSI ID 2 - LUN 0:     QUANTUM LP105S 9101094053.1  03/14/916110

I/O Port Address:      334
Interrupt Level:       9
DMA Channel:           6
Host Adapter SCSI ID:  7

INT 13H active for Drive C:

BusLogic DOS Disk Driver Vx.y (C) CopyRight 1992 BusLogic Corp.
```

In the preceding example, the system has two SCSI host adapter boards and four SCSI disk drives. The sign-on screen will display the SCSI disk device information and the SCSI host adapter board configuration information (e.g., I/O port address and interrupt level) for each of the system's BusLogic DOS Device Managers. In this example, two BusLogic DOS Device Managers have been installed; one for each of the system's SCSI host adapter boards.

As the preceding highlighted line indicates, the BusLogic Extended Hard Disk Driver has been installed on this system. It will support the two SCSI disk drives attached to the system's second host adapter board (the board with the I/O port address of 334H).

This concludes the installation of the BusLogic Extended Hard Disk Driver. Note that although the BusLogic Extended Hard Disk Driver has been installed, DOS will still be able to recognize only the first two disk drives (e.g., Drive C: and Drive D:).

DOS cannot recognize any additional disk drives until they are partitioned and formatted. Consequently, if there are already two disk drives installed on the system, you must use BusLogic's Extended Hard Disk utility (**BTFDISK**) to partition the additional disk drives (e.g., Drive E: and Drive F:).

The partitioned disk drives can then be formatted with the DOS FORMAT command. At that point, DOS will be able to recognize the additional disk drive(s). For information on running BusLogic's **BTFDISK** utility, refer to the next section.

SECTION 4—USING THE BUSLOGIC EXTENDED HARD DISK UTILITY

This section describes how to use the BusLogic Extended Hard Disk utility (filename BTFDISK.EXE). The BusLogic Extended Hard Disk utility (**BTFDISK**) can be used:

- To add a DOS partition to a SCSI disk drive that has a SCSI ID of 0 through 7
- To delete a DOS or non-DOS partition from a SCSI disk drive that has a SCSI ID of 0 through 7
- To specify which partition the system is to use as the active partition and
- To display information about the system's existing partitions.

WARNING

*If you delete a partition it will erase **all** of the existing information on that partition. Be sure that you do not unintentionally delete the partitions on the disk drives that already exist on your system (e.g., Drives C: and D:).*

Although **BTFDISK** can be used to partition a SCSI disk drive that has a SCSI ID of 0-7, BusLogic recommends that you use the DOS **FDISK** utility to add and to delete partitions on the SCSI disk drives(SCSI ID of 0 and 1) that are attached to the first host adapter.

It is recommended that you use **BTFDISK** to add and to delete partitions on any of the system's other disk drives (e.g., Drive E: and Drive F:). This practice can help you avoid inadvertently deleting a partition on an existing disk drive (e.g., Drive C: and Drive D:).

SUPPORTING MORE THAN TWO DISK DRIVES

When all three components of the BusLogic DOS SCSI Software Manager are used, you can support more than two disk drives per system. Note, however, that even after the BusLogic DOS Device Manager and the BusLogic Extended Hard Disk Driver are installed, the additional disks drives must be prepared for DOS.

As Figure 4-1 indicates, unless this disk preparation process is completed, DOS can still only recognize the first two disk drives installed on the system (Drives C: and Drive D:).

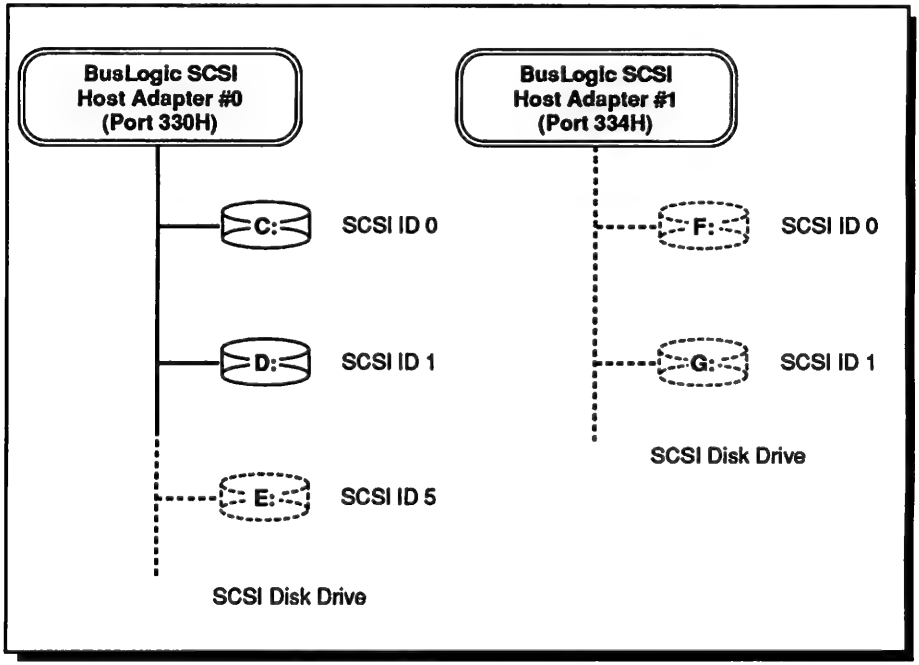


Figure 4-1. Supporting More Than Two Disk Drives

Preparing the Disk Drives for DOS

The standard DOS **FDISK** utility only allows you to partition disk drives that have a SCSI ID of 0 or 1. With BusLogic's **BTFDISK**, you can partition any SCSI disk drive that has a SCSI ID of 0 through 7. This capability allows you to support more than two disk drives per system. For example, with **BTFDISK** you could support a system that has five disk drives.

After using **BTFDISK** to partition the additional disk drives, you would use the DOS FORMAT command to format them. As Figure 4-2 indicates, at this point DOS would be able to recognize the additional disk drives (e.g., Drive E:, Drive F:, and Drive G:).

BTFDISK can also be used to delete DOS and non-DOS partitions (e.g., a UNIX™ partition), to set the active partition, and to display partition information. Note that **BTFDISK** is functionally equivalent to the DOS **FDISK** utility. For information on how to use the **BTFDISK** utility, refer to the rest of this section.

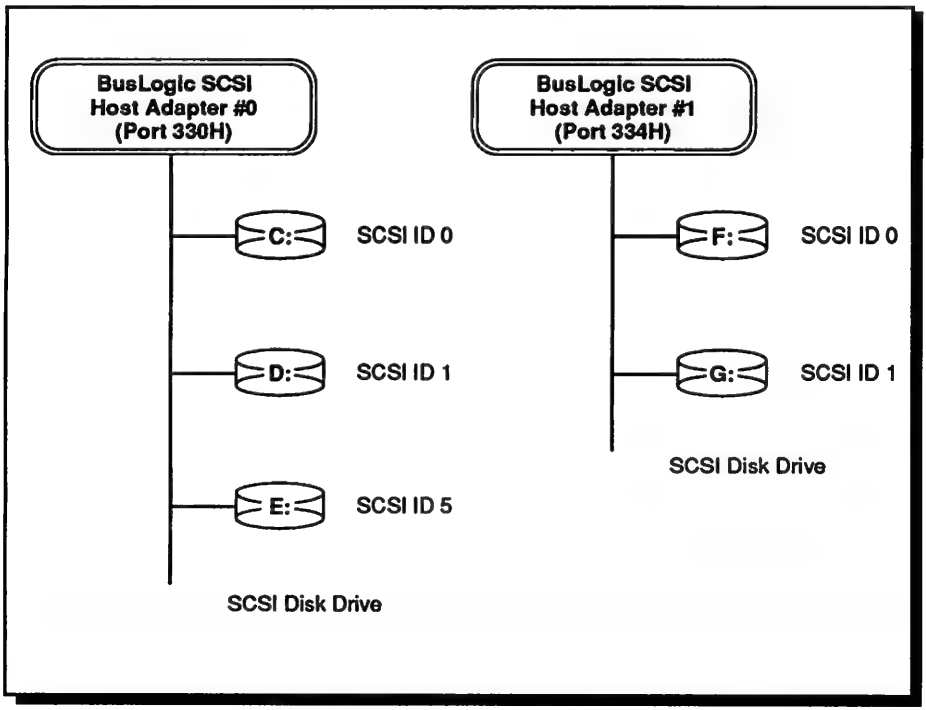


Figure 4-2. The Role of the BusLogic Extended Hard Disk Utility

USING BTFDISK TO ADD A PARTITION

It is assumed that the **BTFDISK** utility (filename BTFDISK.EXE) has already been copied over to the system's hard drive. For more information on this topic, refer to the heading, "Phase 2—Copying the BusLogic DOS SCSI Software Manager Files," in Section 2.

To use the **BTFDISK** utility to add a partition, you must:

1. Check that you have already installed the BusLogic DOS Device Manager (BTDOSM) and the BusLogic Extended Hard Disk Driver (BTMDISK) in the CONFIG.SYS file. These two components of the BusLogic DOS SCSI Software Manager must already be installed in the system's CONFIG.SYS file *before* you run **BTFDISK**.

2. At the DOS prompt (e.g., C:\BTDOSMGR) type:

   BTFDISK <RETURN>

   to invoke the **BTFDISK** utility.

3. Note that the main menu for the **BTFDISK** utility will appear. Refer to the following for a sample of the **BTFDISK** Options menu.

```
Extended Fixed Disk Utility Version x.y
(C) Copyright 1992 BusLogic Corp.

BTFDISK Options
Choose one of the following devices to partition:
    1.  Host Adapter #0  Target #0 -- MAXTOR 7080SCS
    2.  Host Adapter #0  Target #5 -- QUANTUM LP105S 9

Enter Choice:

Press <ESC> to exit BTFDISK
```

The menu will display a list of all the installed SCSI disk drives. The **Host Adapter** field indicates the number of the host adapter board. For example, there is one BusLogic SCSI host adapter board installed in this

system (Host Adapter # 0). If the system only has one host adapter board installed, this number will always be 0. The **Target** field indicates the SCSI ID of the target device attached to the host adapter.

4. From the **BTFDISK** Options menu, enter the number of the device that you want to partition (e.g., **2**) and then press **<RETURN>**.

5. Note that the Partition Option menu will appear. As the following sample indicates, information about the currently selected SCSI disk drive is displayed at the top of this menu.

```
Host Adapter #0  Target #5 -- QUANTUM LP105S 910

Partition Options

Choose one of the following:

1.    Create DOS partition or Logical DOS Drive
2.    Set active partition
3.    Delete partition or Logical DOS Drive
4.    Display partition information

Enter Choice: 1

Press <ESC> key to return to BTFDISK Options.
```

WARNING

*If you delete a partition it will erase **all** of the existing information on that partition. Be sure that you do not unintentionally delete the partitions on the disk drives that already exist on your system (e.g., Drives C: and D:).*

6. From the Partition Options menu, enter 1 to create a DOS partition on the selected drive.

7. After entering 1, press **<RETURN>**.

   The Create Partition Information menu appears. It will display a list of the selected disk drive's partitions. Refer to the following for an example of this menu.

```
                    Create Partition Information

Current disk drive : Host Adapter #0     Target # 5 -- QUANTUM LP105S

Partition   Status   Type        Volume Label    Mbytes   System
1             A      PRI DOS     DOS 5.x         100      FAT32


     Total disk capacity:          100 Mbytes
     Available Drive Capacity for Partition (Mbytes) :   0

     Press <ESC> key to return to the Partition Options.
```

8. From the Create Partition Information menu, enter the size of the partition (e.g., 50 MBytes) that you want to add on the selected drive.

9. After entering the size of the new partition, press **<RETURN>**.

   The partition is created immediately and the Partition Options menu reappears.

10. From the Partition Options menu, you can either quit the **BTFDISK** program or continue to use **BTFDISK**.

    10a. To quit **BTFDISK**, press **<ESCAPE>**. The **BTFDISK** Options menu reappears. Press **<ESCAPE>** again to exit **BTFDISK**. After you have exited **BTFDISK**, the DOS prompt appears.

10b. To continue to use **BTFDISK** to create another DOS partition, repeat the preceding Steps 6-9.

10c. To continue to use **BTFDISK** to set the active partition, proceed to Step 4 under the next heading, "Using **BTFDISK** To Set The Active Partition."

10d. To continue to use **BTFDISK** to delete a partition, proceed to Step 4 under the heading, "Using **BTFDISK** To Delete A Partition," later in this section.

10e. To continue to use **BTFDISK** to display information on the existing partitions, proceed to Step 4 under the heading, "Using **BTFDISK** To Display Partition Information," later in this section.

After you have finished using **BTFDISK**, you must use the DOS FORMAT command to format the SCSI disk drives. For more information on the FORMAT command, refer to your DOS operating system documentation.

USING BTFDISK TO SET THE ACTIVE PARTITION

The **BTFDISK** utility can be used to set the system's active (bootable) partition. Note that only one partition can be active at any one time. It is assumed that the **BTFDISK** utility (filename BTFDISK.EXE) has already been copied over to the system's hard drive. For more information on this topic, refer to Section 2's heading "Phase 2 — Copying the BusLogic DOS SCSI Software Manager Files".

To use the **BTFDISK** utility to add a partition, you must:

1. Check that you have already installed the BusLogic DOS Device Manager (BTDOSM) and the BusLogic Extended Hard Disk Driver (BTMDISK) in the CONFIG.SYS file. These two components of the BusLogic DOS SCSI Software Manager must already be installed in the system's CONFIG.SYS file *before* you run the **BTFDISK** utility.

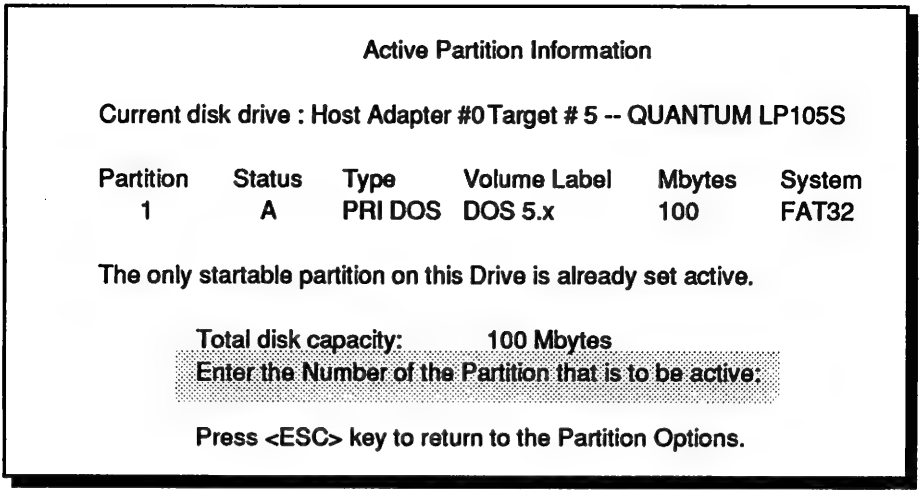
2. At the DOS prompt (e.g., C:\BTDOSMGR) type:

   BTFDISK <RETURN>

   to invoke **BTFDISK**. The **BTFDISK** Options menu will appear.

3. From the **BTFDISK** Options menu, enter the number of the device that contains the partition that you want to select as the active partition. After pressing **<RETURN>**, the Partition Options menu will appear.

4. After the Partition Options menu prompts you to enter a choice, enter **2** and then press **<RETURN>**. The Active Partition Information menu will appear. Refer to the following for an example of this menu.



5. Enter the number of the partition that is be used as the active partition. After pressing **<RETURN>**, the Partition Options menu reappears.

6. From the Partition Options menu, you can either quit the **BTFDISK** program or continue to use **BTFDISK**.

   6a. To quit **BTFDISK**, press **<ESCAPE>**. You will be returned to the **BTFDISK** Options menu. Press **<ESCAPE>** again to exit **BTFDISK**. You will be returned to the DOS prompt.

   6b. To continue to use **BTFDISK** to change the active partition, repeat the preceding Steps 4-5.

   6c. To continue to use **BTFDISK** to create a DOS partition, complete Steps 6-9 under the heading, "Using **BTFDISK** To Add A Partition," earlier in this section.

   6d. To continue to use **BTFDISK** to delete a partition, proceed to Step 4 under the next heading, "Using **BTFDISK** To Delete A Partition."

   6e. To continue to use **BTFDISK** to display information on the existing partitions, proceed to Step 4 under the heading, "Using **BTFDISK** To Display Partition Information," at the end of this section.

USING BTFDISK TO DELETE A PARTITION

The **BTFDISK** utility can be used to delete a DOS or non-DOS (e.g., UNIX) partition. Logical DOS partitions must be deleted before you can delete a primary partition. Primary partitions can be identified by checking the partition's label under the **Type** field within a **BTFDISK** screen. Primary partitions are assigned the type **PRI**.

It is assumed that the **BTFDISK** utility (filename BTFDISK.EXE) has already been copied over to the system's hard drive. For more information on this topic, refer to the heading, "Phase 2—Copying the BusLogic DOS SCSI Software Manager Files," in Section 2.

To use the **BTFDISK** utility to delete a partition, you must:

1. Check that you have already installed the BusLogic DOS Device Manager (BTDOSM) and the BusLogic Extended Hard Disk Driver (BTMDISK) in the CONFIG.SYS file. These two drives must already be installed in the system's CONFIG.SYS file *before* you run the **BTFDISK** utility.

2. At the DOS prompt (e.g., C:\BTDOSMGR), type:

   BTFDISK <RETURN>

   to invoke the utility **BTFDISK**. The **BTFDISK** Options menu will appear.

3. From the **BTFDISK** Options menu, enter the number of the device that contains the partition you want to delete (e.g., **2**) and then press **<RETURN>**.

   The Partition Options menu will appear. Information about the currently selected SCSI disk drive is displayed at the top of this menu. Refer to the following for an example of this menu.

```
Host Adapter #0  Target #5 -- QUANTUM LP105S 910
                 Partition Options

Choose one of the following:
1.      Create DOS partition or Logical DOS Drive
2.      Set active partition
3.      Delete partition or Logical DOS Drive
4.      Display partition information

Enter Choice: 3
Press <ESC> key to return to BTFDISK Options.
```

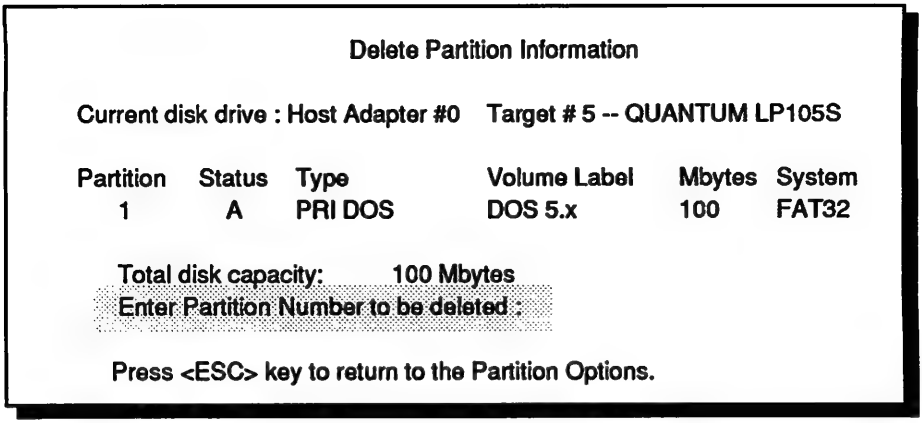
WARNING

If you delete a partition it will erase all of the existing information on that partition. Be sure that you do not unintentionally delete the partitions on the disk drives that already exist on your system (e.g., Drives C: and D:).

4. From the Partition Options menu, enter **3** to delete a partition on the selected device.

5. After entering **3**, press **<RETURN>**.

   The Delete Partition Information menu appears. It will display any existing partitions on the selected SCSI disk drive. Refer to the following for an example of this menu.



6. Enter the number of the partition that you want to delete from the selected SCSI disk drive. After entering the number (e.g., **1**), press **<RETURN>**.

   The partition will be deleted immediately. You will be returned to the Partition Options menu.

7. From the Partition Options menu, you can either quit the **BTFDISK** program or continue to use **BTFDISK**.

   7a. To quit the **BTFDISK** program from the Partition Options menu, press **<ESCAPE>**. You will be returned to the **BTFDISK** Options menu. Press **<ESCAPE>** again to exit **BTFDISK**. You will be returned to the DOS prompt.

   7b. To continue to use **BTFDISK** to delete another partition, repeat the preceding Steps 4-6.

   7c. To continue to use **BTFDISK** to change the active partition, proceed to Step 4 within the heading, "Using **BTFDISK** To Set The Active Partition," earlier in this section.

   7d. To continue to use **BTFDISK** to create a DOS partition, go to Step 6 within the heading, "Using **BTFDISK** To Add A Partition," earlier in this section.

7e. To continue to use **BTFDISK** to display information on the existing partitions, proceed to Step 4 under the next heading, "Using **BTFDISK** To Display Partition Information".

USING BTFDISK TO DISPLAY PARTITION INFORMATION

The **BTFDISK** utility can be used to display information about the existing partitions on the system's SCSI disk drives. It is assumed that the **BTFDISK** utility (filename BTFDISK.EXE) has already been copied over to the system's hard drive as part of the preparation process. For more information on this preparation process, refer to the heading "Phase 2—Copying the BusLogic DOS SCSI Software Manager Files," within Section 2 of this manual.

To use the **BTFDISK** utility to display partition information partition, you must:

1. Check that you have already installed the BusLogic DOS Device Manager (BTDOSM) and the BusLogic Extended Hard Disk Driver (BTMDISK) in the CONFIG.SYS file. These two drives must already be installed in the system's CONFIG.SYS file *before* you run the **BTFDISK** utility.

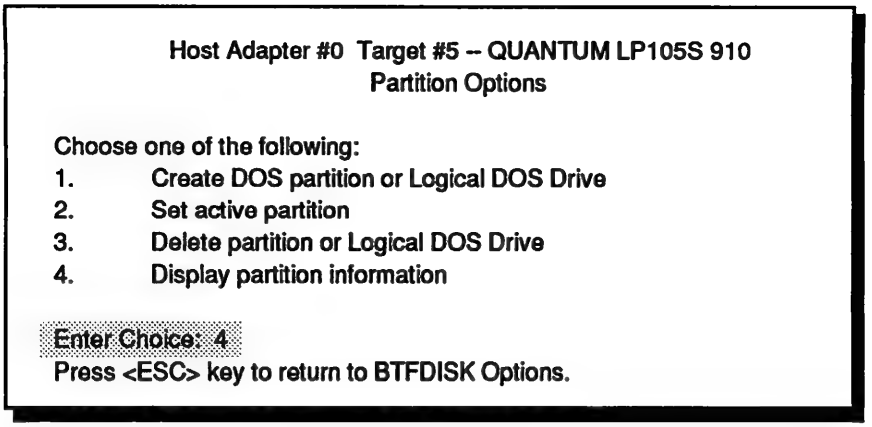
2. At the DOS prompt (e.g., C:\BTDOSMGR), type:

   BTFDISK <RETURN>

   to invoke the **BTFDISK** utility. The **BTFDISK** Options menu will appear.

3. From the **BTFDISK** Options menu, enter the number of the device that you want to display partition information on (e.g., **2**) and then press **<RETURN>**.

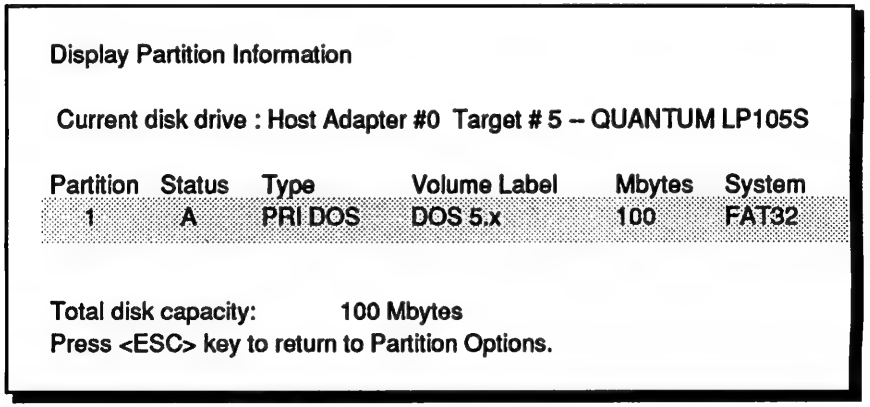
   The Partition Options menu will appear. Information about the currently selected SCSI disk drive is displayed at the top of this menu.



4. From the Partition Options menu, enter **4** to display partition information on the selected device.

5. After entering **4**, press **<RETURN>**.

   The Display Partition Information screen will appear with the requested information displayed. Refer to the following for an example of this screen.



6. When you have finished viewing the partition information, press **<ESCAPE>**. You will be returned to the Partition Options menu.

7. From the Partition Options menu, you can either quit the **BTFDISK** program or continue to use **BTFDISK**.

   7a. To quit the **BTFDISK** program from the Partition Options menu, press **<ESCAPE>**. You will be returned to the **BTFDISK** Options menu. Press **<ESCAPE>** again to exit **BTFDISK**. You will be returned to the DOS prompt.

   7b. To continue to use **BTFDISK** to display partition information on another SCSI disk drive, repeat the preceding Steps 4-5.

   7c. To continue to use **BTFDISK** to change the active partition, go to Step 4 within the heading, "Using **BTFDISK** To Set The Active Partition," earlier in this section.

   7d. To continue to use **BTFDISK** to create a DOS partition, go to Step 6 under the heading, "Using **BTFDISK** To Add A Partition," earlier in this section.

   7e. To continue to use **BTFDISK** to delete a partition, proceed to Step 4 under the heading, "Using **BTFDISK** To Delete A Partition," earlier in this section.

   This concludes the instructions on how to use the **BTFDISK** utility.

WARRANTY INFORMATION

If damage to the BusLogic diskette has occurred, return it in the protective envelope with this manual to your BusLogic supplier. The shipping agent should also be notified if the unit has been damaged during shipment. The BusLogic warranty conditions are given in the back of this manual.

PRODUCT SUPPORT RECORD

The information on this page should be compiled and provided to your supplier in writing to obtain technical support assistance. This will enable your supplier to respond more rapidly and more appropriately to your problem.

About BusLogic Product:

BusLogic Product No: _____
Serial Number _____
Date of Purchase _____
Firmware Version Number: _____
BIOS Version Number: _____

Purchased From:

Company: _____
Address: _____
_____

Purchased By:

Name/Title: _____
Company: _____
Address: _____
_____
Telephone #: _____

About System Hardware Configuration:

System Manufacturer: _____
System Model and Speed: _____
_____
System BIOS Manufacturer: _____
Memory in System: _____
Hard Drives on System: _____

About System Software Configuration:

Operating System/Version: _____
Application Program/Version: _____

Detailed Description of Problem:

STANDARD WARRANTY

BusLogic warrants that subject to the terms of this policy the Products shall be free from defects due to faulty material or workmanship on the part of BusLogic for a period of one year from the date of delivery.

This warranty shall not apply if the Products have been subject to misuse by Customer or any other party; if any material alteration, addition, amendment, or modification shall have been carried out without the prior written consent of BusLogic; failure to install or operate the Products in accordance to BusLogic's Product reference manual; or failure caused by improper or inadequate maintenance of users.

BusLogic will make good by repair or at its option by replacement any Products which become defective within the warranty period. Repairs will be warranted for 90 days. Products or parts replaced under this provision shall become the property of BusLogic.

BEFORE RETURNING A PRODUCT FOR REPAIR, BUYER MUST REQUEST A RETURN MATERIAL AUTHORIZATION (RMA) NUMBER FROM BUSLOGIC.

All Products under warranty returned to BusLogic for repair shall be returned to Customer at BusLogic's expense. Shipping costs for all Products returned to BusLogic for repair which are out of the warranty period shall be at Customer's expense both to and from BusLogic.

Customer is expressly prohibited from issuing Debit Memos for material returned under the provisions of this warranty.

BusLogic shall notify Customer in the event that the Products returned for repair are not, in BusLogic's sole opinion, within this Warranty condition and, unless disposition instructions are given for such Products within thirty (30) days of such notification, the Products will be returned to Customer freight collect.

EXCEPT FOR THE ABOVE EXPRESS LIMITED WARRANTY, BUSLOGIC MAKES NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AND BUSLOGIC SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

The total liability of BusLogic for any claim or damage arising out of this Agreement, and whether in contract or in tort, shall not exceed the price of the individual Product(s) whose defect or damage is the basis of the claim.

IN NO EVENT SHALL BUSLOGIC BE LIABLE FOR ANY LOSS OF PROFITS OF FOR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES.

No action against BusLogic for breach of the warranty shall be commenced more than one (1) year after the accrual of the cause of action.

Customer also agrees to perform its duties and responsibilities under BusLogic's Warranty Policy, which shall be updated from time to time.

BUSLOGIC

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